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ELECTRICITY IN GYNECOLOGICAL PRACTICE.

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CASE I.—*January 22, 1884.* R. S., colored, aged thirty-nine; married seventeen years, one child fifteen years ago. Menses regular, scanty, and painful. Bowels constipated. Uterus found mobile, sharply retroflexed, pressing upon the rectum, and obstructing it. The treatment consisted of the faradic current twice or thrice weekly, of five minutes' duration each.

July 23. Uterus is normal in position and curvature. All painful menstruation has disappeared. Bowels regular. Patient discharged cured. The record of this case is abridged. It belongs to a series started at that time which was interrupted. I make a note of it because the result was a marked one. The negative electrode was placed in the uterus, the positive in the bladder. The strength of the current was determined by the patient's endurance—not strong enough to be painful.

CASE II.—*June 9, 1886.* L. B., saleswoman; single, aged twenty-one. Three years ago she fell astride of a fence, at which time she was seized with an acute pain in the right ovarian region. This compelled her to remain some days in bed.

Since that time she has had a constant pain, aggravated by standing, walking, or exercise of any kind, and worse at her menstrual periods. The pain is of a sharp, lancinating character, starting from the right ovarian region as a centre. Complains also of dragging, pelvic soreness, and backache, with general nervous irritability.

Examination shows the right ovary prolapsed and very painful to the touch; also some cellulitic deposits. The patient has been treated since her fall in the routine manner, iodine and glycerine tampons, hot water injections, counter-irritation, knee-chest position, etc., with no alleviation of symptoms.

An application of the galvanic current was now made in the following manner: the negative electrode was placed in the vagina, in contact with the sensitive ovary and the deposits; the positive was held in the right hand. The strength of the current was four milliampères. Length of treatment fifteen minutes.

17th. Treatment repeated.

21st. Treatment continued; five milliampères. Patient not so sore.

Same treatment repeated on June 24th, July 8th, 12th, 19th, and 21st.

August 4. Treatment ten minutes, ten to eighteen milliampères. Up to this date the improvement has been steady and unbroken. The ovary remains prolapsed, resisting any attempts at reposition, is entirely devoid of any sensitiveness, and the evidences of preëxisting cellulitis are diminished. With the local improvement the systemic disturbances also showed the good effect of the current. With the exception of a laxative at one time and a diuretic mixture at another, galvanism was the only treatment

she received. She was discharged to-day, with the direction to report to us on the first evidence of any trouble.

March 1, 1887. Saw the patient to-day. She states that she has been free from all pain in the pelvis since she last saw us; that her menstrual periods are regular and painless, and that she has been able to attend to her work in the store.

CASE III.—*June 15, 1886.* L. L., aged twenty-four; married five years, sterile; suffers with severe dysmenorrhœa. She applied, August, 1884, to the hospital for relief; received no permanent benefit, and was transferred on this date to me for electrical treatment. The uterus is sharply anteflexed. She was treated with the faradic current, taking patient's feelings as the guide to the strength, each application averaging fifteen minutes, twice and thrice weekly, beginning four days after each menstrual epoch. The negative electrode was placed in the uterus, and the positive in the rectum.

July 10. The first menstrual period since beginning treatment has just passed with less pain.

August 17. This menstrual flow was increased in quantity. Slight pain. This increase in discharge was noticed in all our cases in which we used faradism.

September 18. Menstrual period similar to last one.

October 20. Menses from 10th to 17th. No pain. The curve of the canal was taken again to-day, and was markedly diminished.

November 20. Menses on from 12th to 14th. No pain whatever.

December 10. Patient discharged cured. Directed to report in a month.

February 2, 1887. Examination shows uterus in

normal position and with normal curvature. Menses continued regular and painless.

CASE IV.—*October 2, 1886.* A. A., aged twenty-six, married three years, sterile. Puberty at fifteen; menstruation irregular for past two years. Bowels constipated. Uterus strongly retroflexed. Treatment same as Case I., twice and thrice weekly.

March 30, 1887. Condition greatly improved. Menses regular and painless, being before treatment very painful. The retroflexion, though not so sharp, remains.

CASE V.—*June 12, 1886.* A. W., single, aged twenty-five. Complains of persistent backache, with dragging pelvic pains. Has also a great sensitiveness of the external genitalia and vaginal walls. A condition of chronic pelvic cellulitis was found upon examination, the uterus being bound down.

The galvanic current was given the patient twice a week, changing the position of the electrodes so that the current thoroughly penetrated all the cicatricial bands, and came in contact with the sensitive parts. She was treated from June 12th to July 24th, seven applications in all, with positive relief to all her symptoms, and was then transferred to another department.

CASE VI.—*June 23, 1886.* M. A., colored, aged twenty-six. Married seven years. Sterile. Puberty at seventeen; menstruation normal up to marriage as to time and duration, but always very painful before and during the flow. Has also severe pain in the sacral and inguinal regions. Bowels regular. General health fair. Uterus sharply anteflexed.

The curvature admitted the sound on the finger with difficulty, a condition of stenosis existing also. Treatment of this case was by the faradic current after manner of Case III.

October 27. In the beginning we could scarcely introduce a flexible electrode, and that only after straightening the uterus with a tenaculum. The improvement kept step with the treatment. At this date the curve is greatly diminished.

The dysmenorrhœa has disappeared, and with it all backache and pelvic pain.

December 27. She complains of the reappearance of the pelvic soreness. Galvanic current was applied, ten milliampères, fifteen minutes.

March 30, 1887. Galvanic current continued to the present time. Pain disappeared. Uterus normal in curvature and position. Menses regular and painless.

CASE VII.—*June 30, 1886.* L. F., aged forty. Married twenty-two years. One child twenty-one years ago. Never pregnant since. Puberty at fourteen, regular as to time and duration, but has severe pain with each period. Gives a history of acute pelvic cellulitis four years ago. Has had metrorrhagia at different times since. Has been treated for the past four years by the routine treatment, iodine, glycerine tampons, boracic acid, etc., with the varying results obtainable in this class of ailments. She suffers with the constant aches and dragging pelvic pains that make life to a woman, thus afflicted, almost unbearable.

Examination gives a condition of chronic cellulitis. Uterus immovable. Nodules are distinctly felt behind and on the right side of the cervix, very sensitive to the touch. Treatment, galvanic current; negative electrode in the vagina, resting against these tender lumps, and the positive on the sacrum. Strength of current fifteen milliampères, thrice weekly.

July 15. Pelvic pains have disappeared. Less tenderness upon examination.

December 11. Attention was to-day called to some hemorrhage the patient had eighteen days after her last menstrual period. A sore spot on the posterior vaginal wall was found, caused evidently by the current having been applied stronger than fifteen milliampères. This healed readily under the use of an iodoform ointment. The uterus shows more mobility, and the cellulitic deposits considerable diminution.

March 31, 1887. The treatment has continued to the present time, one to three times a week. The uterus is freely movable, the evidences of pelvic cellulitis have entirely disappeared. There is no sensitiveness to the touch. She says she has "no backaches or any pain." Menses are regular, lasting three days, without pain. Discharged cured.

CASE VIII.—*October 26, 1886.* A. W., aged forty-five. Married, had one child and three miscarriages; last miscarriage was twelve years ago, from which time she dates her trouble. Complains of constant diffuse pelvic pain, sacral and crural neuralgia of the right side. Uterus was found immovably fixed, with hard, tender nodules to the right side of the cervix. She was treated with the galvanic current.

November 2. The patient was treated twice, and to-day she expressed herself as feeling "a great deal better." She did not visit us again.

CASE IX.—*November 4, 1886.* Mrs. B., aged forty-seven. Married twenty-six years; five children and two miscarriages. Was operated upon for lacerated perineum, December, 1885, which was followed by an attack of pelvic inflammation. Puberty at thirteen, and after three years

her menses became regular as to intervals, but each period lasted a week, was profuse in flow, and preceded by severe pain. She was always compelled to remain in bed one week at these times. This condition has been growing worse since the operation.

The uterus is retroflexed, prolapsed, and adherent, measures three and a half inches; vaginal vault rigid and tense; retro-uterine ligaments are contracted. The sensitiveness of the patient is so great as to make the examination almost more than she can endure. She says the pain in her back and limbs prevent her from standing any length of time. Cannot do her own work; is a burden to herself. She was put upon the galvanic treatment in the usual manner and strength. After the third treatment (November 15, 1886) she reports improvement; less pain, feels stronger.

March 31, 1887. Her visits averaged five monthly, fifteen minutes each, fifteen milliampères. The improvement has been steady, and at this date she "feels better than she ever did in her life." Menses are normal in character. Is able to be about on her feet for a longer time with comfort. Is gaining in weight. Tenderness in the vagina less marked. Uterus more mobile, can be moved about with less pain to the patient. Treatment continues.

CASE X.—*December 14, 1886.* E. J. J., aged twenty-eight, colored. Married seven years; one child six years ago; instrumental delivery, dead child. This patient presented herself with a large subperitoneal fibroid filling the posterior *cul-de-sac*, and extending to the right. The examination was attended with very great pain, the nodules being very sensitive. She scarcely tolerated the introduction of the finger. Electrolysis was proposed,

but the patient objected, and it was concluded to put her upon the usual galvanic treatment, with the view of reducing the pain, and possibly the size of the tumor.

March 31, 1887. She was given two treatments a week at first, fifteen milliampères, fifteen minutes. After the sixth application the soreness had entirely disappeared. For the past month she has received three treatments weekly. The improvement as to the pain and discomfort continued permanent, but the size of the tumor has undergone no appreciable decrease.

CASE XI.—*December 22, 1886.* M. O., aged twenty-eight. Married six years. One child and one miscarriage. Miscarriage in second month of marriage. Never been well since birth of child three years ago. Is not able to be about her house work. Has "constant pain and weakness in her left side," with feeling of heaviness, which condition is aggravated by standing, walking, or exercise of any kind.

Puberty at eleven. Menses are irregular in time, and the duration of each period is six days, with pain in first two days. Has lost forty pounds since marriage.

Uterus is retroflexed, prolapsed, measures three and a half inches. Os and canal patulous. Some cellulitic deposits are found in the posterior cul-de-sac.

March 31, 1887. She was, at first, treated with the faradic current, with the hope of rectifying the displacement. After seven treatments, averaging twice a week, with relief to the painful menstruation as a result, but no effect upon the flexion, galvanism was substituted, on account of the cellulitic features of the case.

At this date she says she has gained twelve pounds since beginning the treatment. Is better in every respect. Menses are regular and painless. The deposits have diminished in size and sensitiveness. This patient comes a distance of seventy miles three times a week.

I have submitted these cases, thinking they might be of interest to the profession, as I am confident that the treatment will prove beneficial if tried. They have been collected hastily from my case-book, with no attempt at elaboration.

The method of treatment is detailed under the individual cases. In sharp flexions we begin with a flexible electrode insulated to within two inches of the tip, and as soon as the curve of the uterus will allow, this is replaced by a stiff one, similar to a uterine sound, with the same insulation as the flexible one. This we are in the habit of connecting with the negative pole of the faradic machine. Although the choice of poles is *here* a matter of little importance, in galvanism it is. In the case of a retroflexion, the positive electrode is introduced into the bladder. If it be an anteflexion, a flexible twisted wire electrode is placed in the rectum. This electrode is insulated up to the point, which is a movable olive, allowing graded sizes to be used. This form of electrode is also found of service in treating constipation, etc., as it will follow the convolution of the bowels with ease and little pain.

The electrodes should always be placed in position before turning on the current. In the beginning a painless current should be used, slowly increasing to the point of the patient's comfortable endurance. I have found a hydro-rheostat necessary to the proper gradation of the current, since the weakest current

I could get from an ordinary one cell machine always caused pain when applied through these organs. And if the patient is subjected to an ordeal of suffering at each treatment, her confidence and presence are both lost. Length of treatment is with us fifteen minutes, double that time three times a week will give better results.

In the use of the galvanic current there are some points of importance.

1. A millampèremeter should be always used. Patients cannot be treated scientifically without it. With it we can always give them the same quantity at each treatment. This is impossible if we depend on the number of cells as a guide, since the internal and external resistance vary. I have frequently found that it required twice as many cells to give one day the current I had received from half the number the day before, this fact depending upon both battery and patient.

2. The current should never cause pain, nothing is gained by increasing it to that degree. In Case II. I used four millampères, as a rule, once five, and at another time eighteen to twenty millampères. In all the others I averaged fifteen millampères. In three instances I cauterized the vaginal surface when I exceeded that strength. A rheostat will be valuable in enabling the current to be gradually increased at the beginning and diminished at the end of each treatment.

3. Position of the electrodes. As the result of cauterization by the negative pole is that of an alkaline caustic, soft and more readily absorbed, while the positive is that of an acid, more dense and firm, the negative should be placed in the vagina in contact with the part to be acted upon. We thus ob-

tain the sedative and electrolytic effect, at these points, upon the cellulitic products.

4. Electrodes. For external position I use a plate of copper, five by six inches, covered with Canton flannel and backed with pure rubber. Internally, a straight stiff rod, terminating in a movable olive, of which we have different sizes. This is insulated with rubber to the olive, with walnut handles on the other end. Covering the olive with absorbent cotton, or a disk of Canton flannel, and wetting it in warm water, it is ready for use. The placing of these does not require any exposure of the patient.

5. The electrodes should always be placed in position before connecting them with the battery, then the current turned off gradually by means of the rheostat before removing them. Neglect of this will cause pain to the patient as the electrode passes over the perineum. A bifurcated conducting cord should be used, so that when the current is increased it will not be necessary to break the current, and thus we avoid giving any shock to the patient.

The conclusion that I draw from my work is, that in electricity we have a valuable agent. In uterine displacements, ill developed ovaries and uterus with amenorrhœa, and in subinvolution the faradic current may be used with advantage. But it is the galvanic that I have found the more valuable. All who have had anything to do with gynaecological work know how stubborn many conditions are, and how slow to respond to remedial measures. Many of these cause the patient constant pain, "misery" as they term it. Chronic ovaritis, pachysalpingitis, chronic peritonitis, cellulitis, and lymphadenitis, also pelvic neuralgia, try the skill and patience of the physician. After all the routine

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treatment is exhausted the condition remains very much unchanged.

Now in electricity we have an agent that promotes absorption of the adventitious tissue, allays pain and irritation, and sets up reparative action. It is within the reach of all physicians, requires no very extended knowledge to be able to use it with safety and advantage ; and, although it requires time in its application, the benefits it confers upon a class of patients, in which other treatment is either useless or harmful, amply repay for any outlay of time and the little expense attending it.

I am indebted to my friend, Dr. William E. Ashton, for his kind assistance in this work.

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